

1. (Previously Presented) A method for managing a service across an optical network over a dedicated circuit between a first and second service termination points, the method comprising:

generating a service performance report message at each of the service termination points, each service performance report message having service-specific information related to a performance of the service as determined by the service termination point generating that service performance report message, and each service performance report message identifying the service to which the service-specific information in that service performance report message pertains; and

transmitting the service performance report message generated by one of the service termination points to the other service termination point over a service management channel to enable an assessment of the performance of the service based on the service performance report messages from both service termination points.

2. (Original) The method of claim 1, further comprising monitoring the service management channel from an intermediate network element that is in the dedicated circuit between the service termination points to determine a status of the service.

3. (Original) The method of claim 1, further comprising determining from the performance assessment whether the service is performing in accordance with terms of a service level agreement governing the service.

4. (Original) The method of claim 1, wherein the step of generating a PRM is a scheduled event.

5. (Original) The method of claim 1, further comprising monitoring the PRMs generated by the termination points at an intermediate network element connected to the dedicated circuit between the termination points.
6. (Previously Presented) The method of claim 1, further comprising transmitting a service query command to each of the service termination points over the service management channel.
7. (Previously Presented) The method of claim 6, further comprising receiving a service report having service configuration information over the service management channel from each of the service termination points in response to the service query commands.
8. (Original) The method of claim 1, further comprising transmitting a command message over the service management channel to one of the service termination points to change a state of that service termination point.
9. (Original) The method of claim 8, wherein the state of the service termination point is a loopback condition, and further comprising transmitting a test signal to that one service termination point to verify connectivity.
10. (canceled)
11. (currently amended) The ~~optical network element~~ of claim 40 19, wherein the service management channel includes a byte of a path overhead of an optical transmission frame.
12. (currently amended) The ~~optical network element~~ of claim 40 19, wherein the service management channel includes a ~~field~~ header in a Generic Framing Procedure client management frame.
13. (currently amended) The ~~optical network element~~ of claim 40 19, wherein the message is one of a command message, a response to a command message, a service performance report message, and a priority code message.

14. (canceled)
15. (canceled)
16. (currently amended) The optical network element of claim 40 19,  
wherein the service is one of an asynchronous service, a synchronous service, a  
local area network service, a storage area network service, and a managed  
wavelength service.
17. (canceled)
18. (canceled)
19. (Previously presented) A network element connected at one end of a  
dedicated circuit used to carry customer traffic associated with a service, the  
network element comprising:
  - a client interface receiving client signals from a client network;
  - a service management channel entity deriving from the client signals  
service-specific information related to a performance of the service and  
generating a message in response to the service performance information, the  
message identifying the service to which the service performance information in  
the message pertains; and
  - a transport interface for mapping and adapting the client signals to an  
optical transport facility, the transport interface transmitting the message to a  
network element at the other end of the dedicated circuit over a service  
management channel capable of carrying the message across a network-to-  
network interface.
20. (canceled)
21. (new) The network element of claim 11, wherein the optical transmission  
frame is a Synchronous Optical Network (SONET) frame and the byte of the  
path overhead is a Z3 byte.

22. (new) The network element of claim 11, wherein the path overhead byte has bits for conveying a status of the service and bits for conveying the message.
23. (new) The network element of claim 22, wherein the path overhead byte further comprises bits for conveying commands and responses.
24. (new) The network element of claim 12, wherein the header includes a payload type indicator (PTI) field and a user payload indicator (UPI) field, and wherein the header indicates that the Generic Framing Procedure client management frame contains the message when the PTI and UPI fields contain certain predefined values.
25. (new) The method of claim 1, wherein the first service termination point is in a first network managed by a first service provider and the second service termination point is in a second network managed by a second service provider.